



Louisville Metro Air Pollution Control District

Control Device Permit Application Form AP-300C

Cyclone

Mail application to:
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Louisville, KY 40204
OR
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(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd

Plant Name:

Plant ID:

Date of construction, modification,
installation, or operation:

Control equipment associated
with this process equipment:

Equipment Description

Manufacturer:

Model:

Are outlet straightening vanes used? ☐ Yes ☐ No

Draft: ☐ Forced ☐ Induced

Inlet air flow: Velocity - Volumetric - acfm @ ° Pressure drop -

Collection Method: ☐ Single cyclone ☐ Series cyclones ☐ Multi-cyclone: # cylinders

Collection Efficiency: PM % PM₁₀ % PM_{2.5} %

Describe how the collection efficiency was determined:
(If other than Manufacturer's specification, include documentation supporting the claimed efficiency)

Cylinder Dimensions

	Primary Cylinder	Secondary Cylinder
Length of cyclone cylinder		
Diameter of cyclone cylinder		
Length of cyclone cone		
Cyclone inlet size		
Cyclone outlet size		
Cyclone cone outlet size		

List the contaminants in the waste stream that are removed by the cyclone

Contaminant	CAS # (if applicable)	Gas stream concentration

Describe how the contaminant material is collected and the ultimate disposition of this material.

Instructions for Cyclone

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A cyclone is an inertial separator in which the particulate laden gas stream is forced to spin in a vortex. As the gas changes direction, the inertia of the particles causes them to be separated from the gas stream and collected. When high efficiency and large throughput are necessary, multiple cyclones may be operated in parallel. In a multiple cyclone separator, the housing typically contains a large number of axial inlet cyclone tubes.

General Information

Plant Name Enter the plant name.

Plant ID # This is the identification number assigned to the source by the District. If this application is for a new source for which an ID has not been assigned, leave this blank.

Equipment Description

Manufacturer Enter the name of the company that manufactures the equipment.

Model Enter the model number of the equipment to be installed.

Straightening Vanes Are vanes used in the outlet duct to disrupt the exiting vortex?

Draft Check whether the airflow through the cyclone is by forced or induced draft.

Inlet velocity Enter the nominal inlet velocity (magnitude and units) at the entrance to the settling chamber.

Volumetric flow Enter the flow rate, in actual cubic feet per minute and the nominal temperature at the entrance, circling F for Fahrenheit or C for Celsius degrees.

Pressure drop Enter the drop in pressure between the entrance and exit of the settling chamber, measured in inches of water column.

Collection Method Check whether this installation is a single cyclone, several cyclones in series, or a multicyclone, with a number of small cyclone cylinder arranged in parallel in a single unit. If this is a multicyclone unit, enter the number of cylinders used.

Collection efficiency Enter the collection efficiency for the particle sizes indicated.

Efficiency determination Indicate how the destruction efficiency was determined. (*e.g.* manufacturer's specification, calculation, stack test, *etc*). Include appropriate documentation to support destruction efficiency claims.

Cylinder Dimensions Enter the requested information listed. If there are multiple cylinders and they are of different sizes, complete the requested information for all sizes. For the inlet and outlet sizes, enter the diameter if round or the length and width if rectangular. Enter appropriate dimensions for all sizes.

Contaminant list List the materials that are removed from the airstream by the oxidizer. If a CAS registration number exists for the material, list that as well. Finally, list the typical concentration of the contaminant in the exhaust gas stream.